Objection to the Drawings:

The Examiner objected to the drawings for not showing that each functional unit of a plurality of functional units comprises a programmable state register. However, an example of this feature according to one embodiment is clearly illustrated in Figures 6-8 which provide more detailed illustrations of a plurality of the function units illustrated in Fig. 3. Therefore, Applicants respectfully request removal of the objection to the drawings.

Section 102(e) Rejection:

The Office Action rejected claim 1 under 35 U.S.C. § 102(e) as being anticipated by Marchok (U.S. Patent 6,118,758). Applicants assert that pending claim 1 is not anticipated by Marchok for at least the following reasons.

Marchok does not teach a plurality of functional units configured to operate in series according to a serial communication protocol, wherein each functional unit is configured to perform a different specific function of said serial communication protocol, as recited in claim 1. The Examiner refers to functional units 115, 120, 125 and 130 shown in Fig. 6 of Marchok. However, these functional units operate on an OFDM/DMT signal. An OFDM/DMT signal is an RF signal in which multiple data bits are simultaneously represented in a "constellation" according to a particular frequency phase and amplitude (*see, e.g.*, Fig. 3; col. 4, lines 1-31). The OFDM/DMT signal is not a serial data stream. Thus, the functional units shown in Fig. 6 of Marchok do not operate according to a serial communication protocol.

Furthermore, Marchok does not teach a controller for transmitting and receiving a serial data stream including multiple serial data channels having portions which alternate in time with respect to each other, wherein the plurality of functional units is configured to perform said serial communication protocol on the multiple serial data channels, as recited in claim 1. The OFDM/DMT signal in

Marchok is not a serial data stream including multiple serial data channels having portions which alternate in time with respect to each other. The Examiner refers to the connections between the timing and control logic 340 in Marchok. However, these connections are simply the control signals for the functional units in Fig. 9. The connections between the timing and control logic 340 in Marchok are clearly not multiple serial data channels of a serial data stream. Moreover, the functional units in Marchok's Figs. 6 and 9 operate on an OFDM/DMT signal. Thus, the functional units in Marchok do not perform a serial communication protocol on the multiple serial data channels which alternate in time with respect to each other in a serial data stream.

Section 103(a) Rejections:

The Office Action rejected claim 2 under 35 U.S.C. § 103(a) as being unpatentable over Marchok in view of Rowett (U.S. Patent 5,991,817). Claim 2 is patent for at least the reasons given above in regard to claim 1.

Claims 3-5 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Marchok in view of Kurnick (U.S. Patent 5,721,726). Claims 3-5 are patentable for at least the reasons given above in regard to claim 1.

Claims 6-11 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Kurnick in view of Rowett. Applicants respectfully traverse this rejection in light of the following remarks.

Kurnick in view of Rowett does not teach or suggest a serial communication controller for transmitting and receiving a serial data stream including alternating portions of multiple serial data channels, comprising a memory unit including a separate portion allocated to each of the multiple serial data channels for storing the state information of the functional units, as recited in claim 6. The Examiner refers to Kurnick's dual ported RAM 84. However, the dual port RAM 84 of Kurnick is not a memory unit including a separate portion allocated to each of the multiple serial data

channels for storing the state information of the functional units. There is no teaching or suggestion in Kurnick that its dual port RAM 84 includes separate portion allocated to each of the multiple serial data channels. Nor does Kurnick contain any teaching or suggestion that its dual port RAM 84 stores state information for the functional units. Nor does Rowett teach or suggest a memory unit including a separate portion allocated to each of the multiple serial data channels for storing the state information of the functional units.

Furthermore, Kurnick in view of Rowett does not teach or suggest a microcontroller coupled to each of the plurality of functional units and to the memory unit, wherein the microcontroller is configured to transfer state information between the plurality of functional units and the memory unit such that the plurality of functional units operates alternately upon the portions of the multiple serial data channels, as recited in claim 6. The Examiner refers to RISC controller 50, col. 6 lines 52-54 and col. 7 lines 3-10 of Kurnick. However, the cited portions of Kurnick state nothing about RISC controller 50 transferring state information between functional units 60-72 and dual port RAM 84 such that the plurality of functional units operates alternately upon the portions of the multiple serial data channels. Col. 7, lines 3-10 refers to the data being transmitted or received by the SCC units, not state information. Upon a thorough reading of Kurnick and Rowett, Applicants find no teaching or suggestion of a microcontroller configured to transfer state information between the plurality of functional units and the memory unit such that the plurality of functional units operates alternately upon the portions of the multiple serial data channels.

Similarly, Kurnick and Rowett do not teach or suggest that different state information is transferred for each serial data channel depending on which serial data channel's portion is being operated on by the plurality of functional units, as recited in claim 6. The portions of Kurnick cited by the Examiner do not appear to have any relevance to this limitation of claim 6. Nor does Rowett teach or suggest this limitation.

Furthermore, Kurnick and Rowett do not teach or suggest that each functional unit comprises a programmable state register, and wherein state information stored within the state register of a given functional unit determines the one of the unique operating states in which the functional unit is operating, as recited in claim 6. The Examiner refers to Rowett's Tx status FIFO 139a. Applicants do not see any relevance of Rowett's Tx status FIFO 139a to this limitation of claim 6. As described at col. 12, lines 53-62, the Tx status FIFO 139a is used to associate status from the interface SCCs on the termination of packet transmission with the appropriate buffer descriptor. The Tx status FIFO 139a of Rowett is clearly not a programmable state register that stores state information stored that determines one of a set of unique operating states in which a given functional unit is operating. Neither Kurnick nor Rowett teach or suggest this limitation.

Claim 11 is patentable over Kurnick and Rowett for reasons similar to those given above for claim 6 corresponding to the limitations of claim 11.

Claims 14-16 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Kurnick in view of Marchok. Applicants respectfully traverse this rejection in light of the following remarks.

Kurnick in view of Marchok does not teach or suggest a timing recovery unit configured to produce a clock signal derived from the receive serial data stream and to provide the receive serial data stream, as recited in claim 14. The Examiner refers to the timing and control logic 140 and col. 6, line 65 to col. 7, line 1 of Marchok. However, the timing and control logic 140 of Marchok has absolutely nothing to do with produce a clock signal derived from the receive serial data stream. Nor does it provide the receive serial data stream. Applicants find no teachings in either Kurnick or Marchok of a timing recovery unit configured to produce a clock signal derived from the receive serial data stream.

Furthermore, Kurnick in view of Marchok does not teach or suggest a plurality of functional units configured to operate in series according to a serial communication protocol, and wherein each functional unit is configured to perform a different specific function of the same serial communication protocol, and wherein the plurality of functional units operates alternately upon the portions of the multiple serial data channels of the receive serial data stream to perform the serial communication protocol on the multiple serial data channels, as recited in claim 14. The Examiner refers to functional units 60-72 of Kurnick. However, as shown in Fig. 2 of Kurnick, functional units 60-72 operate in parallel, not in series. Furthermore, Kurnick's functional units are each configured independently to implement different protocols (Kurnick -- col. 6, lines 4-10). Kurnick's functional units do not each perform a different specific function of the same serial communication protocol. Nor do Kurnick's functional units operate alternately upon the portions of the multiple serial data channels.

Allowable Subject Matter:

Claims 12 and 13 were objected to as being dependent upon a rejected base claim but otherwise allowable if rewritten in independent form. In light of the above arguments, Applicants assert that claims 12 and 13 are allowable in their present form.

CONCLUSION

Applicants submit the application is in condition for allowance, and notice to that effect is requested.

If any extension of time (under 37 C.F.R. § 1.136) is necessary to prevent the above referenced application from becoming abandoned, Applicants hereby petition for such extension. If any fees are due, the Commissioner is authorized to charge said fees to

Meyertons, Hood, Kivlin, Kowert, & Goetzel, P.C. Deposit Account No. 501505/5000-74400/RCK.

Also enclosed herewith are the following items:

☒ Return Receipt Postcard

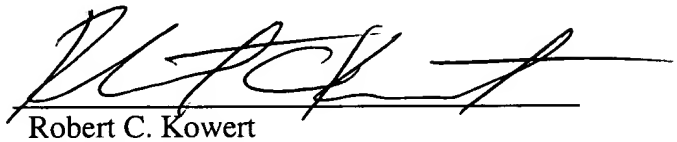
☐ Petition for Extension of Time

☐ Notice of Change of Address

☐ Fee Authorization Form authorizing a deposit account debit in the amount of $ for fees ( ).

☐ Other:

Respectfully submitted,



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